



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/760,065      | 01/12/2001  | Appadurai Thangaraj  | 4355D (DIV)         | 3120             |

7590

01/12/2005

Chief Patent Counsel  
Engelhard Corporation  
101 Wood Avenue  
P.O. Box 770  
Iselin, NJ 08830-0770

EXAMINER

NGUYEN, NGOC YEN M

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/760,065

Applicant(s)

THANGARAJ ET AL.

Examiner

Ngoc-Yen M. Nguyen

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 26-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-60 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1754

### DETAILED ACTION

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 43, 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis in the claims for "the uncoated metal chlorite" as required in the instant claims 43, 48.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 26-60 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 581 550 in view of either CN 1,104,610 or CA 959,238.

EP '550 discloses a solid composition capable of releasing chlorine dioxide upon dissolution in water, said composition comprising:

- a. a water soluble chlorite salt
- b. an oxidizing chlorine-releasing agent, in the form of one or more sodium- and/or potassium-dichloro-s-triazinetriene(s) and/or trichloro-s-triazinetriene(s); and

Art Unit: 1754

c. a proton-donor serving as a water-soluble agent capable of lowering the pH of an aqueous solution to less than 3 (note claim 1).

For the size of the composition, i.e., whether the composition is in the form of powder, tablet or agglomerate, such limitation is not seen as a patentable difference because it would have been obvious to one skilled in the art to select the proper form for the composition as long as the composition can still react to form chlorine dioxide when it contacts water.

The difference is EP '550 does not teach a membrane that separates the solid composition and the water solution.

CN '610 is applied as stated above to teach that it is known and convenient way to place the chlorine generating composition in a bag so that the composition can be added to the water in a pre-measured amount by throwing the bag in the water.

Alternatively, CA '238 can be applied as stated below.

CA '238 discloses a process for producing chlorine dioxide by introducing water into a receptacle which contains a chlorite of an alkali metal or an alkaline earth metal and an acid. The chlorite and the acid are wrapped or packed in a water soluble envelope or container so that upon the introduction of water into the receptacle, the water soluble envelopes dissolve, to react and to form chlorine dioxide which is immediately absorbed by the water to form an aqueous chlorine dioxide or chlorous acid solution (note page 4, first full paragraph).

For claim 60, it would have obvious to one skilled in the art to use any water soluble material, including Kraft paper to form the envelope for the chlorine-generating

Art Unit: 1754

composition. Without a showing of criticality or unexpected results, the use of Kraft paper is not seen as a patentable difference.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to put the chlorine-generating composition in a bag, either a water-insoluble one as suggested by CN '244 or a water-soluble one as suggested by CA '238 to form bags of pre-measured amount of the chlorine-generating composition and such bags would be conveniently added to the water to form chlorine dioxide.

Applicant's arguments filed October 26, 2004 have been fully considered but they are not persuasive.

Applicants stated that an English translation of CN 1,104,610 was enclosed, however, a copy of it cannot be found.

Applicants argue that CN '610 requires the encapsulation of sodium chlorite to inhibit reaction of the sodium chlorite with the acid particles.

CN '610 is not applied to teach the composition for producing chlorine, EP '550 is applied as stated above to teach such composition. CN '610 or CA '238 is applied to teach the desire in the art to have a pre-measured amount of chlorine dioxide forming composition in a bag or pouch so that the composition can be introduced into the water in an easy fashion.

Applicants argue that the composition of EP '550 in a cloth bag of CN '610 would be susceptible to premature reaction of the components due to moisture in the atmosphere.

Art Unit: 1754

It should be noted that Applicants' product is not required to be "stable" in moisture atmosphere. Moreover, EP '550 does recognize that "the humidity of the ambient air may be sufficient to release chlorine dioxide from the solid composition" (page 3, lines 54-57), thus, when the composition is not ready to be used, it would have been obvious to one skilled in the art to store such composition in a dry place.

Applicants argue that CA '238 fails to disclose the use of a woven cloth bag as a means for holding the reactants as liquid water is introduced.

CA '238 is applied to teach a membrane which is water soluble, not to teach a woven cloth bag.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Art Unit: 1754

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Stan Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed (571) 272-1700.

  
Ngoc-Yen M. Nguyen  
Primary Examiner  
Art Unit 1754

nmn  
January 10, 2005